

CLAIMS

What I claim is:

- 1 1. A portable communication device comprising:
2 at least one processor coupled to at least one transceiver; and
3 an identity module removeably coupled to the processor, wherein information of
4 the identity module controls operation of the device, wherein the processor receives
5 binding information including identification information from components of the device
6 and subscriber information from the identity module, forms an association between the
7 device and the module by assigning a device identification (DID) to the binding
8 information, generates at least one binding file in a memory area of the module, and
9 stores the device identification and the binding information in the binding file.
- 1 2. The device of claim 1, wherein the identity module is at least one of a Subscriber
2 Identity Module (SIM), a SIM card, a User Identity Module (UIM), a UIM card, a digital
3 data storage device, a smart card, a compact flash memory device, and a portable
4 memory device.
- 1 3. The device of claim 1, wherein the identification information includes at least one
2 of an International Mobile Equipment Identity (IMEI), a Type Approval Code (TAC), a
3 Final Assembly Code (FAC), a Serial Number (SNR), an Electronic Serial Number
4 (ESN), an embedded digital signature, a device model, information of a software version
5 of the portable communication device, and configuration information of the portable
6 communication device.
- 1 4. The device of claim 1, wherein the memory area of the module includes a non-
2 volatile memory.
- 1 5. The device of claim 1, wherein the device is at least one of personal computers,
2 portable computing devices, cellular telephones, portable telephones, portable
3 communication devices, and personal digital assistants.

1 6. A communication device comprising a control subsystem that forms an electronic
2 linkage between the device and a removeably coupled identity module, wherein the
3 control subsystem reads identification information of the components and the identity
4 module and, in response, dynamically links the device to the identity module by writing
5 the identification information to a binding file of the identity module along with an
6 assigned device identification corresponding to the device and identity module
7 combination, wherein information of the binding file controls subsequent activation and
8 operation of the device in a communication network.

1 7. A portable communication device comprising:
2 means for receiving identification information from components of the device;
3 means for receiving subscriber information from a module removeably coupled to
4 the device;
5 means for electronically associating the device with the module by assigning a
6 device identification (DID) to binding information including the identification
7 information and the subscriber information; and
8 means for generating a binding file in a memory area of the module and storing
9 the device identification and the binding information in the binding file.

1 8. A communications system comprising:
2 a communications network including a plurality of network components; and
3 at least one personal communication device coupled to the network for use by
4 subscribers in transmitting and receiving information, the communication device
5 including at least one processor coupled among at least one transceiver and a removeable
6 identity module so that information of the identity module controls operation of the
7 communication device, wherein the processor receives binding information including
8 identification information from components of the communication device and subscriber
9 information from the identity module and transmits the binding information to the
10 network components, wherein the processor receives a device identification (DID) from
11 the network components and dynamically binds the communication device with the
12 identity module by generating at least one binding file in a memory area of the identity

13 module and storing the device identification along with the associated binding
14 information in the binding file.

1 9. The system of claim 8, wherein the processor is further configured to:
2 determine if the communication device and the identity module are registered to
3 provide service on the communications network by comparing the subscriber information
4 with the binding information;
5 in response to a determination that the communication device and the identity
6 module are registered, activating the communication device and the identity module
7 using information of the binding file; and
8 in response to a determination that at least one of the communication device and
9 the identity module are not registered, registering at least one of the communication
10 device and the identity module and generating a binding among the communication
11 device and the identity module by associating a device identification with the
12 identification information and the subscriber information, and storing the device
13 identification, the identification information, and the subscriber information in the
14 binding file.

1 10. The system of claim 8, further comprising a data stream including the binding
2 information, wherein the data stream is generated by the communication device and
3 transmitted to at least one of the network components via at least one coupling between
4 the communication device and the network components.

1 11. The system of claim 8, wherein the coupling among the network components and
2 the personal communication device is at least one of wireless connections, wired
3 connections, and hybrid wireless/wired connections.

1 12. The system of claim 8, wherein the communications network includes local area
2 networks (LANs), metropolitan area networks (MANs), wide area networks (WANs),
3 proprietary networks, backend networks, and the Internet.

1 13. A method for forming dynamic associations among portable modules and portable
2 communication devices, comprising:
3 receiving identification information from at least one component of a portable
4 communication device;
5 receiving identification information from a portable module coupled to the
6 portable communication device;
7 assigning a device identification to the association between the portable module
8 and the portable communication device;
9 generating a binding state file in a memory area of the portable module; and
10 storing the device identification and the identification information of the portable
11 module and the portable communication device in the binding state file.

1 14. The method of claim 13, further comprising determining if the portable
2 communication device and the coupled portable module are registered to provide service
3 on a communications network.

1 15. The method of claim 14, wherein the determination includes determining whether
2 an embedded digital signature is stored in the components of the portable communication
3 device.

1 16. The method of claim 14, wherein the determination includes comparing the
2 identification information of the portable module with information of the binding state
3 file.

1 17. The method of claim 14, further comprising registering the portable
2 communication device to provide service on the communications network when it is not
3 registered to provide service, wherein registration of the portable communication device
4 includes providing an embedded digital signature to components of the communications
5 network and using the embedded digital signature to activate subscriber services to the
6 portable communication device.

1 18. The method of claim 14, further comprising re-registering the portable
2 communication device to provide service on the communications network with the
3 coupled portable module when the portable communication device is registered with the
4 communication network and there is an absence of data of an association between the
5 portable communication device and the coupled portable module.

1 19. The method of claim 13, further comprising:
2 generating a data stream in the portable communication device, the data stream
3 including the identification information of the portable module and the portable
4 communication device;
5 transferring the data stream to at least one server via at least one coupling with the
6 server; and
7 in response to assigning a device identification to the association, transferring the
8 device identification to the portable communication device.

1 20. The method of claim 13, wherein a component of the portable communication
2 device assigns the device identification to the association, where the device identification
3 is transmitted to at least one server via at least one coupling with the server.

1 21. The method of claim 13, further comprising:
2 receiving identification information from at least one component of a first
3 portable communication device;
4 receiving identification information from a portable module coupled to the first
5 portable communication device;
6 assigning a first device identification to the association between the portable
7 module and the first portable communication device;
8 generating a first binding state file in a memory area of the portable module; and
9 storing the first device identification and the identification information of the
10 portable module and the first portable communication device in the first binding state file.

1 22. The method of claim 21, further comprising:

2 transferring the portable module from the first portable communication device to
3 a second portable communication device;
4 receiving identification information from at least one component of the second
5 portable communication device;
6 receiving identification information from the portable module;
7 assigning a second device identification to the association between the portable
8 module and the second portable communication device;
9 generating a second binding state file in the memory area of the portable module;
10 and
11 storing the second device identification and the identification information of the
12 portable module and the second portable communication device in the second binding
13 state file.

1 23. The method of claim 13, wherein the portable module is at least one of a
2 Subscriber Identity Module (SIM), a SIM card, a User Identity Module (UIM), a UIM
3 card, a digital data storage device, a smart card, a compact flash memory device, and a
4 portable memory device.

1 24. The method of claim 13, wherein the identification information of the portable
2 communication device includes at least one of an International Mobile Equipment
3 Identity (IMEI), a Type Approval Code (TAC), a Final Assembly Code (FAC), a Serial
4 Number (SNR), an Electronic Serial Number (ESN), an embedded digital signature, a
5 device model, information of a software version of the portable communication device,
6 and configuration information of the portable communication device.

1 25. The method of claim 13, wherein the identification information of the portable
2 module includes at least one of an International Mobile Subscriber Identity (IMSI), a
3 Mobile Country Code (MCC), a Mobile Network Code (MNC), a Mobile Station
4 Identification Number (MSIN), a Mobile Station International Integrated Service Digital
5 Network (ISDN) Number (MSISDN), a Number Assignment Module (NAM), and
6 information of a subscriber.

1 26. A method for controlling operation of a portable communication device with a
2 communication network, comprising:
3 receiving identification information from components of the device and
4 subscriber information from at least one memory card in response to placing the device in
5 an operational state, wherein the memory card is removeably coupled to the components;
6 determining if at least one of the device and the memory card are registered to
7 provide service on the communication network by comparing the subscriber information
8 with information of a binding file of the memory card;
9 in response to a determination that the device and the memory card are registered,
10 activating the device and the memory card using information of the binding file; and
11 in response to a determination that at least one of the device and the memory card
12 are not registered, registering at least one of the device and the memory card and
13 generating a binding among the device and the memory card by associating a device
14 identification with the identification information and the subscriber information, and
15 storing the device identification, the identification information, and the subscriber
16 information in the binding file.

1 27. The method of claim 26, wherein registering at least one of the device and the
2 memory card includes initially registering the device, wherein initial registration of the
3 device comprises:
4 reading an embedded digital signature from the components of the device;
5 transmitting the embedded digital signature to the communication network; and
6 activating subscriber services to the device and assigning the device identification
7 to a combination of the device and the coupled memory card in response to receiving the
8 embedded digital signature.

1 28. The method of claim 26, wherein registering at least one of the device and the
2 memory card includes re-registering the device, wherein re-registration of the device
3 comprises:

4 activating subscriber services to the device in response to receipt of the
5 identification information from a registered device and the subscriber information of an
6 unregistered memory card; and
7 assigning the device identification to a combination of a registered device and an
8 unregistered memory card coupled to the registered device.

1 29. The method of claim 26, wherein a binding between a first device and the
2 memory card is associated with information of a first memory area of the binding file,
3 wherein a binding between a second device and the memory card is associated with
4 information of a second memory area of the binding file.

1 30. A computer readable medium including executable instructions which, when
2 executed in a processing system, dynamically forms bindings between a portable module
3 and portable communication devices by:
4 receiving identification information from at least one component of a portable
5 communication device;
6 receiving identification information from a portable module coupled to the
7 portable communication device;
8 assigning a device identification to the association between the portable module
9 and the portable communication device;
10 generating a binding state file in a memory area of the portable module; and
11 storing the device identification and the identification information of the portable
12 module and the portable communication device in the binding state file.